Abstract

The present invention provides methods and compositions useful for obtaining stress tolerant plants. In particular, the present invention provides methods for producing plants which are tolerant under abiotic stress conditions such as drought stress, anaerobic stress, osmotic or salt stress, temperature stress and stress caused by nutrients and/or pollutants. The methods involve production within a plant of a cyclin dependent kinase (CDK) which is non-phosphorylated. Production within a plant of a non-phosphorylated CDK may be achieved by introducing into a plant a nucleic acid molecule encoding a non-phosphorylateable CDK, the expression of which enhances the amount or results in *de novo* production of a non-phosphorylated form of CDK. Vectors comprising a nucleic acid molecule encoding a non-phosphorylatable CDK, as well as transgenic plant cells, plants, and harvestable parts of such plants are also provided. Stress tolerant plants may also be obtained in accordance with the present invention, by conferring to the plant the capacity to provide under stress conditions, CDC25 or functional analogue thereof which is capable of dephosphorylating an endogenous CDK of a plant. Thus, plants having the capacity to inhibit under stress conditions the expression or activity of at least one of Wee-kinase, MIK1 or MYT or a functional equivalent thereof, and methods for obtaining such plants, are also part of the present invention.